REMARKS

The Final Office Action mailed August 17, 2009 has been received and carefully noted. Claims 1-4, 6-14, 16-24, and 27 are currently pending in the subject application and are presently under consideration.

No claims have been amended, canceled, or added herein. A listing of claims can be found on pages 2-6 of this Response.

Favorable reconsideration of the pending claims is respectfully requested in view of the following comments.

I. Examiner Interview Summary

The Applicant thanks the Examiner for courtesies extended during the telephonic interview with the Applicant's Representative Olivia J. Tsai (Reg. No. 58,350) on October 7, 2009. During the interview, the Applicant's Representative clarified a distinction of the claims. Namely, the independent claims recite "... to block a thread from dispatching to the graphics engine," while cited reference Rosenbluth discloses thread execution after the threads have already arrived at the graphics engine. Accordingly, Rosenbluth does not disclose the recited aspect in connection with dispatching a thread to the graphics engine. The Examiner was receptive to this distinction and instructed the Applicant's Representative to submit a Response. The Examiner indicated that she would then confer with her Supervisor on how to proceed with this case.

II. Rejection of Claims Under 35 U.S.C. §103(a)

Claims 1-4 are rejected under 35 U.S.C. §103(a) as being unpatentable over Andrews *et al.* (U.S. 2005/0122339) ("Andrews") in view of Rosenbluth *et al.* (U.S. 2003/0046488) ("Rosenbluth"). Claims 6-10 are rejected under 35 U.S.C. §103(a) as being unpatentable over Andrews in view of Rosenbluth, and further in view of Hussain (U.S. 2004/0233208) ("Hussain") and Chrysos *et al.* (U.S. 6,549,930) ("Chrysos"). Claims 11-13, 16-20, and 22 are

rejected under 35 U.S.C. §103(a) as being unpatentable over Hussain in view of Chrysos. Claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over Hussain in view of Chrysos, and further in view of Baylor *et al.* (U.S. 2002/0078124) ("Baylor"). Claim 21 is rejected under 35 U.S.C. §103(a) as being unpatentable over Hussain in view of Chrysos, and further in view of Andrews *et al.* (U.S. 2005/0122339) ("Andrews"). Claims 23, 24, and 27 are rejected under 35 U.S.C. §103(a) as being unpatentable over Andrews, in view of Rosenbluth, and Hussain. However, these references do not teach or suggest all the claim limitations.

The claims are generally directed to rendering graphics using a render-cache with a multi-threaded, multi-core graphics processor. In particular, independent claim 1 recites "the render-cache controller to **block a thread from dispatching to the graphics engine** if the thread specifies a cache-line address of the render-cache containing a pixel in flight" (emphasis added). The Examiner concedes that Andrews does not teach dispatching threads to a graphics engine as related to pixel data, and therefore offers Rosenbluth (*See* Final Office Action, pg. 4).

Rosenbluth is generally directed to a lookup mechanism for packet processing. While the Examiner notes that Rosenbluth discloses threads executed in strict order (*See* Final Office Action, pgs. 4, 21, and 22), the **execution** of threads in order is not equivalent to the **dispatching** of threads. Namely, threads are dispatched to the graphics engine before they can be executed. Accordingly, threads may be **executed** in an order not withstanding the order in which they are **dispatched**. Claim 1 recites that a thread is **blocked** from being **dispatched** to the graphics engine if the thread specifies a cache-line address of the render-cache containing a pixel in flight. As noted in the telephonic interview, the thread execution in Rosenbluth occurs subsequent to the threads being dispatched and Rosenbluth does not present any particular manner in which dispatching to the graphics engine occurs.

As to independent claim 11, this claim recites "the render-cache controller is to **block the thread dispatcher from dispatching threads** generated by raster logic if threads include cache-line addresses of the render-cache containing pixel data in flight" (emphasis added). Independent claim 18 recites "**blocking a thread corresponding to the previously allocated pixel data from dispatching to a graphics engine** if the previously allocated pixel data is in flight" (emphasis added). Independent claim 23 recites "the graphics processor further comprises raster logic to generate threads, each thread including at least one cache-line address indicating the

location of the pixel data in the render-cache, and a thread dispatcher to **dispatch each thread to the graphics engine only** when the render-cache controller indicates a cache hit during a lookup operation, and the pixel data stored at the at least one cache-line address is not in-flight" (emphasis added).

The Applicant does not discern any part of the other cited references that cures the aforementioned deficiencies of Andrews and Rosenbluth regarding the aspects of the amended independent claims. For example, cited reference Chrysos simply sets forth an explanation of what it means to have an instruction being "in-flight," but does not indicate any action that would occur due to an instruction being "in-flight." By contrast, the claims recite that a thread will be blocked from dispatching to the graphics engine when a thread specifies a render-cache pixel being "in-flight." Any dependent claims not mentioned above are submitted as not being obvious for at least the same reasons given above in support of their base claims.

It should be noted that not all of the assertions made in the Office Action, particularly those with respect to the dependent claims, have been addressed here, in the interest of conciseness. The Applicant reserves the right to challenge any of the assertions made in the Office Action by the Examiner, with respect to the relied upon art references and how they would relate to the Applicant's claim language, including the right to swear behind or otherwise remove an improper art reference.

In view of the above, withdrawal of these rejections is respectfully requested.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,
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Susan M. Manriquez 10/14/09